

**Notice of Allowability**

Application No.

09/689,632

Examiner

Sow-Fun Hon

Applicant(s)

TAHON ET AL.

Art Unit

1794

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the board decision dated 11/06/07.
2. ☒ The allowed claim(s) is/are 4,5,7-11,14 and 17.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>11/20/07</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance                                    |
|  | 9. <input type="checkbox"/> Other _____  |

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

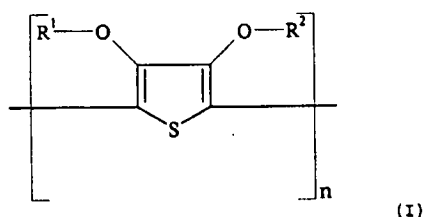
Authorization for this examiner's amendment was given in a telephone interview with Mary Breiner on November 15, 2007.

2. Claim 12 is cancelled.

3. Rewrite claim 4 as:

- - A liquid crystal alignment layer obtained by a method of making a liquid crystal alignment layer comprising the steps of:

(i) providing a layer on a substrate, said layer comprising a polythiophene according to formula (I):



wherein R<sup>1</sup> and R<sup>2</sup> together represent a C<sub>1</sub>-C<sub>4</sub> alkylene group or a cycloalkylene group and  $n > 1$ , and a polyanion; and

(ii) mechanically rendering said layer liquid crystal aligning;

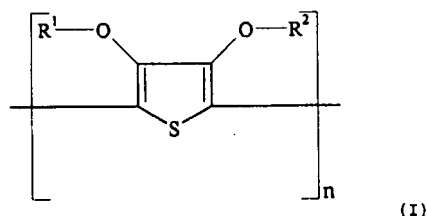
wherein said liquid crystal alignment layer is a patterned layer including conducting and non-conducting areas. - -

4. Rewrite claim 7 as: - - Liquid crystal alignment layer according to claim 4, ~~wherein said liquid crystal alignment layer is a patterned layer including conducting and non-conducting areas and wherein said liquid crystal alignment layer is not removed at non-conducting areas.~~ - -

5. Rewrite claim 8 as:

- - A liquid crystal device comprising a pair of substrates each having an electrode thereon and a liquid crystal disposed between said substrates, wherein at least one of said substrates is provided with a layer system comprising a liquid crystal alignment layer obtained by a method of making a liquid crystal alignment layer comprising the steps of:

(i) providing a layer on a substrate, said layer comprising a polythiophene according to formula (I):



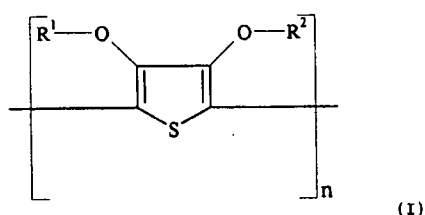
wherein R<sup>1</sup> and R<sup>2</sup> together represent a C<sub>1</sub>-C<sub>4</sub> alkylene group or a cycloalkylene group and n > 1; and

(ii) mechanically rendering said layer liquid crystal aligning. - -

6. Rewrite claim 14 as:

- - A liquid crystal display comprising a liquid crystal display cell comprising a liquid crystal alignment layer obtained by a method of making a liquid crystal alignment layer comprising the steps of:

(i) providing a layer on a substrate, said layer comprising a polythiophene according to formula (I):



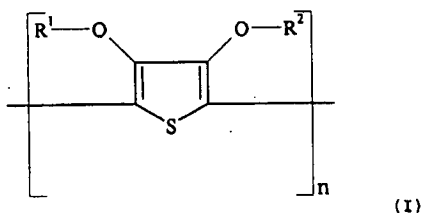
wherein R<sup>1</sup> and R<sup>2</sup> together represent a C<sub>1</sub>-C<sub>4</sub> alkylene group or a cycloalkylene group and n > 1; and

(ii) mechanically rendering said layer liquid crystal aligning. - -

7. Rewrite claim 17 as:

- - A liquid crystal display comprising a liquid crystal device comprising a pair of substrates each having an electrode thereon and a liquid crystal disposed between said substrates, wherein at least one of said substrates is provided with a layer system comprising a liquid crystal alignment layer obtained by a method of making a liquid crystal alignment layer comprising the steps of:

(i) providing a layer on a substrate, said layer comprising a polythiophene according to formula (I):



wherein R<sup>1</sup> and R<sup>2</sup> together represent a C<sub>1</sub>-C<sub>4</sub> alkylene group or a cycloalkylene group  
and n > 1; and

(ii) mechanically rendering said layer liquid crystal aligning. - -

8. Amend Specification: Page 1: Above line 1, "The application claims the benefit of US Provisional", insert title - - LIQUID CRYSTAL ALIGNMENT LAYER - -

9. Amend Abstract: Below Title "[ABSTRACT]", delete "LIQUID CRYSTAL ALIGNMENT LAYER".

10. Rewrite Title of Abstract as: - - ABSTRACT- -

11. Claims 4-5, 7-11, 14, 17 are allowed according to the decision by the Board of Patent Appeals and Interferences, dated November 6, 2007.

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Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris, can be reached at (571)272-1478. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*/Sophie Hon*

Sow-Fun Hon

*Callie Shushu*  
Callie Shushu  
Supervisory Patent Examiner